

most nearly resembles; they are peculiar to Tanganyika, except for a *Petrochromis* in Lake Nyassa and a *Cyphotilapia* in the Congo.

The remaining genera have the pharyngeal apophysis formed partly by the basioccipital; the widely distributed *Haplochromis* has two endemic species in Tanganyika; there are also a number of endemic genera with small conical teeth, closely related to *Haplochromis*; of these *Aulonocranus* leads to *Trematocara*, and *Ectodus* through *Callochromis* to *Xenotilapia* and *Grammatotria*.

A well-marked group includes genera with small scales, a'l endemic; of these *Hemibates*, with small conical teeth, is intermediate between *Haplochromis* and *Bathybates*, with strong pluriserial teeth, and *Haplotaxodon*, with rather small uniserial teeth. *Xenochromis* and *Plecodus* differ from *Haplotaxodon* only in their peculiar dentition. Another well-marked group apparently derived from *Haplochromis* includes the genera with strong anterior teeth; this group includes *Eretmodus* and *Spathodus*, with incisor-like teeth and three anal spines, and *Telmatochromis*, *Julidochromis*, and *Lamprologus*, with strong conical teeth and 4 to 10 anal spines. All but *Lamprologus* are peculiar to the lake, and the great diversity of the Tanganyika species of *Lamprologus* and its close relationship to the more generalized *Telmatochromis* make it almost certain that it originated in Tanganyika.

The above remarks may be summarized thus:—Nearly all the Tanganyika Cichlidæ are endemic species belonging to genera that originated in the lake; except *Neotilapia* these genera fall into two divisions, which may have evolved in the lake from two ancestral types, one nearly related to *Limnotilapia* and the other to *Haplochromis*.

IV.—New or little-known Tipulidæ (Diptera).—I. Ethiopian Species. By CHARLES P. ALEXANDER, Ph.D., Urbana, Illinois, U.S.A.

THE new species described in the following pages will be discussed more fully and figured in a monographic treatment of the crane-flies of the Ethiopian region that the writer has in preparation.

The species described were sent to me for naming by Rev. J. A. Reis, Dr. E. Warren, and Prof. A. J. T. Janse, to all of whom I express my sincere thanks.

The holotypes are preserved in the collection of the writer, unless stated otherwise.

Dicranomyia connectans, sp. n.

Colour dark brown; tarsi white; wings brown, the tips darker; cord far out near the wing-tip; anal angle lacking; Cu_2 and 1st A fused for a short distance back from the wing-margin.

Male.—Length 6.6–8.8 mm.; wing 7.3–8.2 mm.

Female.—Length 6.7 mm.; wing 6.8 mm.

Rostrum yellowish brown, darkest above. Palpi dark brown. Antennæ dark brown, the first segment paler brown; flagellar segments elongate-oval, with long black verticils. Head dark brown.

Pronotum dark brown, yellowish laterally. Mesonotal prescutum reddish brown without stripes, the humeral region a little brighter. Pleura pale, sparsely yellowish pollinose. Halteres very elongate, dark brown. Legs with the fore coxæ brown, the other coxæ yellowish; trochanters dull yellow; remainder of the legs dark brown excepting the tarsi, which are largely white; on the fore legs only the extreme bases of the metatarsi are a little infuscated; the other legs have about the basal third of the metatarsus brown, broadest on the middle legs; two terminal tarsal segments bright yellow. Wings cuneiform, with no anal angle, the cord lying far out near the wing-tip; membrane strongly brownish, darkest at the apex; stigma oval, dark brown; veins dark brownish black. Venation as in *D. cuneiformis*, de Meij., with the following exceptions:—cell 1st M_2 shorter, nearly square, the basal deflection of Cu_1 just before the middle of its length; 1st A runs close to Cu and is fused with Cu_2 at the wing-margin, this short fusion about equal to Sc_2 .

Abdomen elongate, dark brown, including the hypopygium.

Hab. West Africa.

Holotype, ♂, Lolodorf, Cameroun, January 9, 1919 (*J. A. Reis*).

Allotopotype, ♀, January 9, 1919.

Paratopotypes, 2 ♂, January 9–15, 1919.

D. connectans is closely related to *D. cuneiformis*, de Meij. (Java), but is readily separated from this and all other known species of the genus by the apical fusion of Cu_2 and 1st A .

Dicranoptycha natalia, sp. n.

General coloration dark brown, the wings with a strong dark brown suffusion.

Male.—Length 8–8.5 mm.; wing 8.3–8.6 mm.

Rostrum and palpi dark brown. Antennæ rather short, dark brown, the second scapal segment a little brighter; the first two flagellar segments enlarged and closely approximated, the third to fifth short-cylindrical, the remaining flagellar segments gradually elongated. Head brown, with a yellowish pollen.

Mesonotum dark brown, sparsely pollinose, without stripes. Pleura brown. Halteres brown, paler at the base, darkest on the knobs. Legs with the coxæ brown, the apical portions of the middle and hind coxæ on the outer face more yellowish; trochanters yellow, with a jet-black spot on the margin, and here produced into a sharp tooth as in the genus; legs dark brown, the basal portion of the femora more yellowish, this narrowest on the fore legs, broadest on the hind legs. Wings with a very strong dark brown suffusion, deepest along the costal region; the fork from the first anal vein into cell *Cu* and a streak in cell *R* paler; veins dark brown. Venation: *Sc* ending slightly beyond the fork of the sector; *Rs* about one-fourth longer than the long cell 1st *M*₂.

Abdomen dark brown, the hypopygium a little brighter, segments 7 and 8 and the terminal half of segment 6 black.

Hab. South Africa.

Holotype, ♂, Maritzburg, Natal, 1916 (*Dr. Conrad Akerman*).

Paratopotype, a badly broken male.

Type in the collection of the Natal Museum.

Rhamphidia flavitarsis, sp. n.

Rostrum longer than the head; mesonotum dark brown, almost black above, the pleura dull yellow; legs dark brown, the tarsi yellowish; wings subhyaline, the stigma dark brown.

Male.—Length, excluding rostrum, 8–8.3 mm., rostrum about 1 mm.; wing 8.8 mm.

Female.—Length 11–11.2 mm.; wing 8.5 mm.; ovipositor, tergal valves, 2.1 mm.

Rostrum longer than the head, brown above, darkest near the apex, more yellowish beneath and on the sides; palpi dark brown. Antennæ moderately elongated, the scape brown, the flagellum dark brown; flagellar segments elongate-oval, with long verticils that are longest and most conspicuous on the terminal antennal segments. Head dark brownish black.

The long neck is brown. Pronotal scutum brownish black; scutellum light yellow. Mesonotal prescutum dark

brown, a broad, almost black median area; lateral margins of the sclerite narrowly paler. Pleura dull yellow. Halteres brown, the knobs darker, the base of the stem yellow. Legs with the coxæ dull yellow, the fore coxæ more brownish on the outer face; trochanters dull yellow; remainder of the legs dark brown, the last four tarsal segments and the extreme tips of the metatarsi dull orange-yellow. Wings subhyaline; cell Sc , a seam beneath vein Cu , and the wing-apex a little darker; stigma elongate-oval, dark brown; veins dark brown. The following veins bear conspicuous macrotrichiae:— Rs , apical part of R_1 , R_{2+3} , all of R_{4+5} , apical portions of M_{1+2} and M_{3+4} ; one near mid-length of the last section of Cu_1 and a few on Cu_2 . Venation: Sc ending beyond the fork of Rs , Sc_2 at the tip of Sc_1 ; basal deflection of R_{4+5} about equal to $r-m$; basal deflection of Cu_1 at or beyond the fork of M .

Abdominal tergites dark brown; sternites yellow, more darkened on the sixth and seventh segments; hypopygium brownish yellow.

The female is similar to the male in most respects, the ovipositor with the valves very long and slender, the tergal valves almost straight, a little upcurved at the tips; sternal valves acicular, the tips with a few long hairs.

Hab. West Africa.

Holotype, ♂, Lolodorf, Cameroun, January 10, 1919 (*J. A. Reis*).

Allotopotype, ♀, January 15, 1919.

Paratopotypes, 10 ♂ ♀, January 9-16, 1919.

Trentepohlia (Mongoma) albilata, sp. n.

Legs with the femora tipped with white; tibiæ with a narrow white basal band, the apices very broadly white; fore femora with three basal bristles, the other femora with a row of from eight to ten small setæ; wings with two or three long curved setæ on the posterior margin of the wing-petiole.

Male (type).—Length 10 mm.; wing 8.7 mm.; fore leg, femur 13.5 mm., tibia 16.8 mm., tarsus 15.2 mm., black band on tibia 5 mm.; hind leg, femur 15 mm., tibia 16 mm., tarsus 13 mm., black band on tibia 5 mm.

Male (series).—Length 9-11 mm.; wing 7-9 mm.

Female (series).—Length about 9.5 mm.; wing 8 mm.

Rostrum yellow; palpi brownish black. Antennæ dark brownish black, pale at the extreme base, moderately elongated; flagellar segments long-oval. Head dark grey along

the eyes, more yellowish on the front and the occipital region.

Pronotum yellow. Mesonotum dark brown; the pre-scutum broadly margined with dull yellow. Pleura dull yellow. Halteres rather short, dark brown, the extreme base more yellowish. Legs with the coxæ yellow, the fore coxæ a little darker; trochanters dull yellow; femora dark brown, the extreme bases a little paler, the tips white, broadest on the fore femora; tibiæ white, with a relatively narrow (5 mm.) black subbasal band, the white apex occupying the apical half or more of the segment; tarsi white, a patch of hairs at the base of the middle and hind metatarsi and the tips of the tarsi more yellowish. The white femoral apex is a trifle broader than the tibial base on the fore legs; the tibial base is much broader than the femoral tip on the middle and hind legs. The legs are armed in both sexes; the fore femora have three long erect bristles, with one or more additional smaller setæ in a group near the base; the middle and hind femora each bears a row of some eight to ten small subequidistant bristles near the base; femora with several long setæ at apex, these a little more slender on the fore femora. Middle and hind metatarsi on the inner face at the base with a longitudinal row of conspicuous orange hairs, these more distinct on the posterior metatarsi. Wings greyish subhyaline, the costal cell more yellow, the subcostal cell more brownish; stigma narrow, oval, brown; extreme tip of the wing indistinctly darker; veins brownish black; the cord and vein *Cu* very narrowly and indistinctly seamed with brownish. Venation: *r* long, more than twice the length of R_{2+3} between it and the fork of the latter; basal deflection of M_{1+2} short, usually less than *m*; outer deflection of M_3 evenly arcuated, long, the inner end of cell M_3 lying far proximad of cells R_5 and M_2 ; basal deflection of Cu_1 at or close to the fork of M ; fusion of Cu_2 and 1st *A* slight. A group of two or three long curved setæ on the caudal margin of the wing-petiole.

Abdominal tergites dark brown, the basal segment paler laterally; sternites yellowish.

Hab. West Africa.

Holotype, ♂, Lolodorf, Cameroun, January 16, 1919 (*J. A. Reis*).

Allotopotype, ♀, January 15, 1919.

Paratopotypes, 200 ♂ ♀, January 9-16, 1919.

T. fragillima, Westw., the type of the subgenus *Mongoma*, is very insufficiently described by Westwood. The insect is

characterized as being pitchy black, the thorax more dilute ; legs brown, with the knees, the tibial tips, and the tarsi white. At the base of the fore femora are two spinules. Specimens from Madagascar that Osten-Sacken later referred, with considerable doubt, to *fragillima* had the entire distal third of the tibiæ white. In the present species the entire distal half of all the legs in both sexes is white.

Trentepohlia (Mongoma) reisi, sp. n.

General coloration brown, more yellowish beneath ; femora and tibiæ with the tips white ; tarsi white ; femora with a series of about a dozen spines near the base ; posterior tibiæ with a series of from eight to ten stout setæ ; wings nearly hyaline.

Male (type).—Length 8.6 mm. ; wing 8 mm. ; fore leg, femur 12.5 mm., tibia 16 mm. ; hind leg, femur 14.3 mm., tibia 15 mm., tarsus 11 mm.

Male (series).—Length 8.6–9.5 mm. ; wing 7.6–9 mm.

Female (series).—Length 10 mm. ; wing 8.6.

Rostrum light yellow ; palpi dark brownish black. Antennæ moderately long, dark brownish black, the flagellar segments long-oval. Head dark brown, paler on the occiput and underneath on the genæ, which bear a few long curved hairs.

Pronotum dark brown above, yellowish laterally. Mesonotal prescutum yellowish brown, darker brown anteriorly ; remainder of mesonotum pale brown. Pleura pale yellow, a little more brownish dorsally. Halteres short, dark brown, the base yellowish. Legs with the coxæ and trochanters yellow ; femora dark brown, paler at the base, the tips passing into white ; tibiæ brown, the bases indistinctly whitish, the tips passing into white, these about twice as wide as the white femoral tips ; tarsi white or pale yellowish white. All the femora with a series of from ten to seventeen short stout black spines near the base, extending in a single row along the ventral face ; these spines are slightly variable in number, but are apparently more numerous on the fore femora ; femoral tips with a few slender blackish hairs ; hind tibiæ near the tip with from eight to ten long, curved, erect, black setæ, five or six of which are grouped on the white tips, the proximal three or four less crowded and located on the brown areas. Wings nearly hyaline, the costal and subcostal cells a little more yellowish ; stigma pale brownish yellow ; veins pale brown. Venation : similar to *T. albitala*, differing as follows :—cell 1st M_2 shorter and broader ;

outer deflection of M_{1+2} long, so that the inner end of cell R_5 is about on a level with cell M_3 ; outer deflection of M_3 short, squarely arcuated to almost angulated; basal deflection of Cu_1 rather far before the fork of M ; fusion of Cu_2 and 1st A rather extensive, about equal to m , vein Cu being strongly bent backward at the point of fusion; cell 2nd A wider.

Abdomen dark brown above, the sternites and hypopygium more yellowish. Male hypopygium with the pleural appendages a little longer than *T. albilata*.

Hab. West Africa.

Holotype, ♂, Lolodorf, Cameroun, January 9, 1919 (*J. A. Reis*).

Allotopotype, ♀, January 10, 1919.

Paratopotypes, 27 ♂ ♀, January 9-15, 1919.

T. reisi is readily told from all other described species of the genus by the curious armature of the femora and the posterior tibiæ. This condition occurs in both sexes.

This interesting fly is dedicated to the collector, Rev. J. A. Reis.

Lecteria triacanthos, sp. n.

Mesonotum yellowish, the prescutum with four fulvous stripes; legs with the femora reddish brown, a narrow white ring beyond mid-length, surrounded on either side by a blackish ring; tibiæ white, brown at the base and apex, a broad black band before mid-length; the three basal tarsal segments yellowish white, tipped with brown; metatarsi with a group of three stout spines at the extreme base; wings broad, subhyaline, heavily banded and dotted with brown and grey.

Male.—Length about 14 mm.; wing 12.7 mm.; hind leg, femur 9 mm., tibia 8.6 mm.

Rostrum and palpi black, sparsely grey pruinose. Antennæ with the basal segment black, the second segment light brown, the flagellum brown; there are only fourteen antennal segments, the first flagellar segment being a fusion of apparently three segments as in *Conosia*; first scapal segment elongate; first flagellar segment oval, greatly narrowed at the base; the following three segments short-cylindrical, the others gradually lengthened into long-cylindrical; the flagellar segments are clothed with a dense white pubescence, longer and more conspicuous on the basal segments, flagellar segments with long verticils, one of each segment being longer than the others, giving to the flagellum a second appearance, these longest verticils attaining a length

that is nearly equal to half the length of the entire flagellum. Head reddish brown.

Mesonotal prescutum yellowish, with four long bright fulvous stripes; remainder of the mesonotum fulvous, the mid-line of the scutum and the scutellum more yellowish. The mesonotum is densely and minutely setigerous, the punctures black. Pleura brownish. Halteres light brown, the knobs a little darker. Legs with the coxæ and trochanters dull yellow; femora reddish brown, beyond mid-length with a narrow white ring which has a subequal blackish ring on either side, this white mark largest and most distinct on the posterior femora; tibiæ white, the apical quarter pale brownish, the extreme tip black; base of the tibiæ brown, a broad black band before mid-length; three basal tarsal segments yellowish white, black at the tips, palest on the metatarsi, the remaining tarsal segments brown. The legs are clothed with a long, fairly dense, semierect pubescence; metatarsus at the extreme base with a transverse group of three stout black spines. Wings rather broad, subhyaline, with a heavy dotted and banded pattern as follows:—a broad band at the cord and another at the origin of the sector extending across the wing to the margin, ending at the tip of 2nd *A*; this pattern does not include the costal cell; the band at the cord is forked at its cephalic end, one branch encircling *Sc*₂, the other the tip of *Sc*₁ and *R*₁; these bands are pale brown, broadly margined with dark brown, to produce an ocellate appearance; similar ocellate markings at the outer end of cell 1st *M*₂, the tip of *R*₂, and the fork of *M*₁₊₂; cell *C* yellowish, with about a dozen dark brown dots; remainder of the wing with numerous small pale brownish dots that are larger and more diffuse in the anal cells; veins brown, *C*, *Sc*, and *R* more yellowish. Venation: generally similar to *L. africana*, Alex. (Congo); basal deflection of *R*₄₊₅ shorter and more arcuated basally; cell 1st *M*₂ more nearly rectangular, *M*₃ being almost in a line with *M* before the fork of the latter.

Abdominal tergites fulvous, the apical segments indistinctly ringed caudally with silvery grey; hypopygium brown; sternites similar, the lateral margins blackish, the posterior margin pale; eighth sternite black, conspicuously projecting. Male hypopygium with the ninth tergite transversely truncated with a deep U-shaped median notch; pleural appendages densely white pubescent, each at the apex produced into a slender, slightly curved, black point.

Hab. West Africa.

Holotype, ♂, Lolodorf, Cameroun, January 13, 1919 (*J. A. Reis*).

Tipula setosipennis, sp. n.

Palpi short, brownish black; antennæ of the male moderately elongated, yellow, the apical segments infuscated basally; mesonotum dull yellowish, the prescutum with three brownish-grey stripes that are margined with dark brown; wings grey, streaked longitudinally with brown and subhyaline; apical cells of the wings strongly setulose; male hypopygium yellowish, the sclerites fused into a nearly continuous ring; region of the ninth tergite produced caudad into a broad depressed median lobe.

Male.—Length 17 mm.; wing 15.3 mm.

Female.—Length 18 mm.; wing 15.5 mm.

Frontal prolongation of the head short, light brownish yellow above, dark brown on the sides, the dorsal surface with numerous long black hairs, which are most numerous toward the rather long nasus; mouth-parts and palpi dark brownish black, the latter short. Antennæ of the male elongate, extending about to the base of the abdomen, the basal segments of the flagellum elongate, the terminal segments shortened; antennæ yellow, the terminal segments more infuscated, especially on the slight basal enlargement. Head dark grey, more yellowish on the front and along the inner margin of the eyes; middle of the vertex blackish. Frontal tubercle distinct, bifid by a deep longitudinal impression.

Mesonotal prescutum light brownish yellow, with three brownish-grey stripes that are distinctly margined with black, the median stripe split by a similar black median vitta; scutum with the median area dull yellow, the lobes brownish grey margined with black; scutellum light yellow; postnotum yellowish grey. Pleura dull yellowish; a conspicuous brown blotch on the mesosternum and mesepisternum. Halteres dark brown, the knobs blackish. Legs with the coxæ and trochanters yellowish; femora and tibiæ dull yellow, the tips narrowly dark brownish black; tarsi dark brown, the bases of the metatarsi more yellowish. Wings broad, greyish, longitudinally streaked with subhyaline and brownish; costal area more yellowish; the subhyaline areas include a broad obliterative streak before the cord in the ends of cells *R* and *M*, running through cell 1st *M*₂ to the wing-apex in cell *R*₅; the pale areas include all of cell *R*₅ except the extreme base, the extreme bases of cells *M*₁ and *M*₂, and virtually all of cell 1st *M*₂; the first anal and cubital cells are

largely pale; stigma dark brown; a broad brownish seam along vein *Cu* and narrower ones along the cord; veins dark brown, those of the costal region more yellowish; strong setæ in the apical cells of the wing from R_2 to Cu_1 . Venation: petiole of cell M_1 short; *m-cu* long.

Abdomen rather long for the male sex of this genus of flies (about 12 mm.). Basal abdominal segments dull yellowish, segments 3 to 8 more brownish; tergites with a narrow, more or less distinct, dark brown sublateral stripe; lateral margins of the segments pale. Hypopygium yellowish, the sclerites fused into a ring. Region of the ninth tergite produced caudad into a broad depressed median lobe whose posterior margin is gently concave or feebly notched, with numerous minute blackened spicules. Outer pleural appendage narrowed basally, broadened distally, the outer face densely covered with a long pale pubescence and a few long black setæ. Inner pleural appendage with a posterior fleshy pale lobe whose proximal face is provided with long pale setæ, the anterior blade compressed. Region of the ninth sternite profoundly incised beneath on the mid-ventral line. Eighth sternite unarmed, the dorsal margin with a row of about eight black spinous setæ. Ovipositor with the tergal valves acicular, the sternal valves shorter, compressed.

Hab. South Africa.

Holotype, ♂, Pretoria, Transvaal, December 5, 1918 (A. J. T. Janse).

Allotopotype, ♀, January 4, 1919.

Paratopotype, ♂, February 2, 1919.

V.—*A new Crab of the Genus Sesarma from Basra.*

By W. T. CALMAN, D.Sc.

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SPECIMENS of the crab described below have recently been presented to the Museum by Capt. C. L. Boulenger, who obtained them while on service in Mesopotamia. Other specimens from the same locality, and clearly of the same species, have been in the Museum for many years under the name "*Sesarma dehaani*, Milne-Edwards," given to them by Mr. E. J. Miers. A comparison with Japanese and Chinese specimens of *S. dehaani**, however, reveals certain definite, if not very striking, differences, and the Basra specimens are therefore recorded under a new specific name.

* This species has recently attracted attention as one of the intermediate hosts of the lung-trematode, *Paragonimus westermanni*.